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I. INTRODUCTION

Reid vapor pressure (RVP) is a common measure of a fuel's volatility, or how quickly the fuel evaporates. The lower the RVP, the less volatile the fuel.¹ In 1990, under the provisions of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) established summertime limitations on RVP for gasoline blends to "reduce gasoline emissions...that are a major contributor to smog."² The science is sound that using higher blends satisfies the intent of the Clean Air Act, but only E10 was given a waiver to be sold year-round. Why?

II. CURRENT LAW

Blended gasoline RVP may not exceed 9.0 pounds per square inch (psi). The RVP of E10 is around 10.0 psi, which is what necessitated the original 1990 E10 1.0 psi waiver. This "one pound waiver" does not legislatively extend for ethanol blends above E10, even though in 2019 EPA ruled that E10 and E15 are "substantially similar" fuels.³ This allowed E15 to share the one pound waiver. However, refining interests successfully litigated, overturning the rule in 2021, which has led to *temporary* summertime waivers issued for E15 over the past two years.

III. RVP OF HIGHER BLENDS

As ethanol is added to gasoline, the RVP of the blend rises until it peaks at E10. From there, the RVP decreases as more ethanol is added. This was proven as early as 2010 by, of all organizations, the American Petroleum Institute (API is the nation's largest oil and gas trade association). API found that "blending ethanol into gasoline at concentrations

between 10% and 30% ...pose[s] no additional challenge to meeting volatility requirements" and that "the vapor pressure is greatest when the concentration of ethanol in gasoline is 10% by volume. At higher concentrations, the vapor pressure of the blend decreases."⁴

Two years later, the National Renewable Energy Laboratory (NREL) corroborated API's results in an extensive study. They found that "the RVP impact of 15% ethanol is indistinguishable from that of 10% ethanol in gasoline for all volatility seasons and base hydrocarbon vapor pressures" and "that with respect to the regulation of gasoline vapor pressure for the summer ozone season, there is no technical reason for treating E10 differently from E15 or E20."⁵ Figure 1 below provides a visual representation of API and NREL's findings.

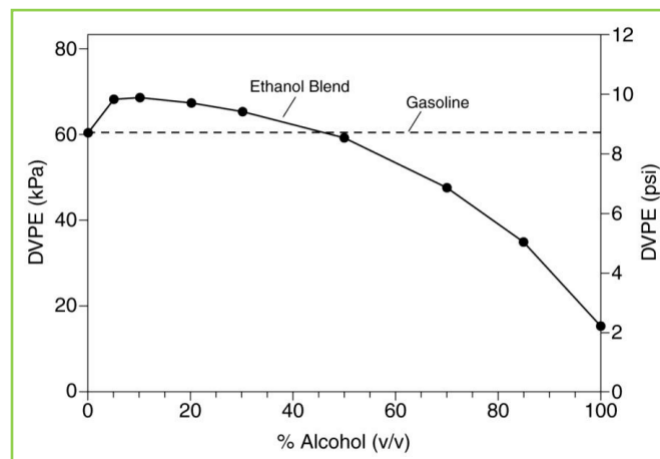


Figure 1: Effect of ethanol on RVP of gasoline⁶

IV. CONCLUSION

Given that RVP smog concerns over higher blends of ethanol have long been proven to be groundless, including even by oil and gas interests, it is time for a permanent legislative fix allowing E15 to be sold year-round. That E15 is substantially similar with E10 is well known, and American drivers should be able to enjoy the lower-cost, lower-emissions benefits of E15 throughout the year.

¹ Bracmort, K. (2022). Year-Round Sale of E15. Congressional Research Service.

² U.S. Environmental Protection Agency (2022). Gasoline Reid Vapor Pressure.

³ U.S. EPA (2019). Modifications to Fuel Regulations To Provide Flexibility for E15.

⁴ American Petroleum Institute (2010). Determination of the Potential Property Ranges of Mid-Level Ethanol Blends.

⁵ McCormick, R. & Yanowitz, J. (2012). Discussion Document – Effect of Ethanol Blending on Gasoline RVP. National Renewable Energy Laboratory.

⁶ Ibid.